

CLAIMS:

1. A shaving apparatus with a housing and at least one cutting unit which can be pivotably and resiliently pressed in with respect to the housing, said cutting unit comprising an outer cutter and an inner cutter that can be driven into rotation with respect to the former, said inner cutter being provided with cutting elements with cutting edges, while said outer
5 cutter is provided with hair trap openings bounded by cutting edges for cooperating with the cutting edges of the cutters for the cutting of hairs, wherein during cutting of a hair a cutting force (F_C) is exerted by the hair on the inner cutter, and a plane through the totality of cutting edges defines a cutting plane, said shaving apparatus being further provided with a drive device having a drive shaft for driving the inner cutter, which drive device during cutting of a
10 hair exerts a drive force (F_D) on the inner cutter, while the drive shaft exerts a prestress force in the direction of the outer cutter, characterized in that
- the drive device comprises only one coupling member that can be driven into rotation and that is provided with at least one driving surface,
 - the drive shaft is axially supported on the outer cutter by means of the
15 coupling member, and
 - the inner cutter is provided with at least one driven surface cooperating with the driving surface for exerting the driving force on the cutter, the direction of said driving force being substantially perpendicular to the driving surface and the driven surface.
- 20 2. A shaving apparatus as claimed in claim 1, characterized in that means are present for obtaining a small contact pressure between the cutters.
3. A shaving apparatus as claimed in claim 1, characterized in that the driving surface and the driven surface cooperating therewith have mutually corresponding helical
25 shapes.
4. A shaving apparatus as claimed in claims 2 and 3, characterized in that
- the inner cutter has a carrier for the cutting elements, which carrier is provided with the driven surfaces,

- a coupling member is present which is coupled to said carrier, the carrier being movable in axial direction with respect to the coupling member, while said coupling member can be coupled to the drive shaft and is provided with the driving surfaces, and

- the means for obtaining a small contact pressure between the cutters are
5 present between the carrier and the coupling member.

5. A shaving apparatus as claimed in claim 4, characterized in that said means are formed by at least one compression spring.

10 6. A shaving apparatus as claimed in claim 5, characterized in that said means are formed by centrifugal elements which are enclosed between a pressure surface of the carrier and a surface of the coupling member that is directed radially outwards and obliquely towards the carrier.

15 7. A shaving apparatus as claimed in claim 6, characterized in that the coupling member is provided with a cam, and the pressure surface of the carrier is directed obliquely towards the coupling member viewed in a direction opposed to the drive direction, such that the centrifugal elements lie enclosed between said cam and the sloping pressure surface.

20 8. A shaving apparatus as claimed in claim 4, characterized in that the means for obtaining a small contact pressure comprises a spring which causes a torque between the coupling member and the inner cutter, by means of which the helical driving surface is held against the cooperating driven helical surface.

25 9. A shaving apparatus as claimed in claim 8, characterized in that the spring is a blade spring bent in axial direction from a plate, said plate being fastened to the inner cutter.

10. A shaving apparatus as claimed in claim 9, characterized in that the plate is circular with hair-pulling elements at its circumference, each such element lying against an
30 associated cutting element in front of said cutting element seen in the drive direction.